PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/694,277	Confirmation No. 2806
Applicant:	:	Jason M. Brewer	
Filed	:	10/27/2003	
TC/A.U.	:	2142	
Examiner:	:	Prieto, Beatriz	
Docket No.	:	TI-25247A	
Customer No.	:	23494	

For: Interconnected Ethernet and 1394 Network

APPELLANT'S BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant respectfully present his brief in support of his appeal of the final rejection of the claims in this case. The Notice of Appeal was filed on October 13, 2005. A Petition for an Extension of Time for Two (2) Months is submitted herewith, as is authority (Fee Transmittal) for payment of the fee for said Petition as well as the fee for filing this brief in support the appeal.

i. Real party in interest

The real party in interest in this application is Texas Instruments Incorporated.

ii. Related Appeals and Interferences

The undersigned is aware of no appeals or interferences which will directly affect or have a bearing on, or be directly affected by, the Board's decision in this appeal.

iii. Status of claims

Claims 30 through 37, 42 through 46, 49 through 63, 66 through 70, 73, and 74 were finally rejected in the Office Action of July 13, 2005, and are the subject of the present appeal.

iv. Status of amendments

In response to the final rejection made on July 13, 2005, Appellant filed on September 13, 2005, a Request for Reconsideration with no Amendment. In response thereto, the Examiner issued, on September 26, 2005, an Advisory Action. The Advisory Action indicated that the proposed amendments filed after the final rejection would not be entered because they raise new issues that would require further consideration and/or search, but there were no such amendments offered by Appellant. On January 12, 2005, in preparation for the present appeal brief, two typographical matters were noticed in dependent claims 73 and 74, namely, those claims had been previously amended but were incorrectly indicated to depend from claim 50, whereas they should have been amended to depend from independent claim 51; accordingly, on January 12, 2005, Appellant submitted a Rule 116 Amendment to correct those matters. Since the January 12, 2005 amendment was offered before the filing of the present appeal brief, then under 37 CFR 41.33(a) that amendment may be admitted as provided under 37 CFR 1.116. Accordingly, for purposes of this brief, Appellant will assume that the January 12, 2005 will be entered into the record with the two corrected typographical matters.

The claims on appeal in this case are therefore identical with those finally rejected, with the exception of the two typographical matters in claims 73 and 74 that were sought to be corrected after final.

v. *Summary of claimed subject matter*

A. *Overview*

This inventive claimed subject matter relates to computers and computer networks, and by way of example is more particularly directed to an interconnection of an Ethernet network to a 1394 network.[1] Often networks are heterogeneous, meaning at the network level one network has various attributes differing from the other network. Standard techniques allow communication between computers on different network types. By convention, when a host computer seeks to communicate on the network, it is referred to as the source host computer and the computer to which it is communicating is referred to as the destination host computer.[2] The techniques used for communication between the source and destination host computers are known as protocols.[3] One considerably prolific network protocol is known in the art as TCP/IP, where this name is actually a combination of the two standards used in the protocol. The first protocol is TCP which is an abbreviation for transport control protocol. The second protocol is IP which is an abbreviation for internetwork protocol.[4]

One technique for permitting internetwork communication using IP involves the use of so-called routers. With the use of routers, if a host computer intends to communicate an internetwork information packet to a destination host computer, then the host computer forms the information packet to include the IP information of the destination host computer and further encapsulates this information with the IP information of the router. Next, when the router receives the encapsulated packet, it recognizes from the multiple levels of IP information that the packet is ultimately intended for a destination host computer on another network. Thus, the router is required to take still additional action at the IP level. For example, the router strips the outer IP information from the packet, thereby leaving the IP information pertaining to

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1 Specification of S.N. 10//694,277, page 1, lines 12 through 13.
2 Specification, *supra*, page 18, lines 4 through 26; page 20, line 20 through page 21, line 1.
3 Specification, *supra*, page 2, lines 7 through 11.
4 Specification, *supra*, page 2, lines 18 through 21.

the destination host computer.[5] However, this raises various complexities that are sought to be improved upon by the present inventive subject matter.

The inventive subject matter relates to a computer internetwork configuration such as shown in Figure 1 and which includes two separate computer networks that are shown by examples as an Ethernet network and an IEEE 1394 network (hereafter referred to as a "1394 network").[6] Each of the networks of Figure 1 is connected to a number of host computers, where each of the host computers may communicate in an intranetwork fashion, that is, to any other host computer along only the same network to which it is attached, or alternatively each of the host computers may communicate in an internetwork fashion, that is, with the source host computer on one network (e.g. Ethernet) and the destination host computer on the other network (e.g., 1394). Instead of using a complex approach such as a router described above, in the inventive scope internetwork communications are facilitated by a link layer computer (e.g. H4 in Figure 1) that is connected to both networks.

Each computer in the network has a multi-level hierarchy of data communication, and Figure 2 illustrates a block diagram of such a hierarchy for the host computers that are connected to only one network (H1 through H3 and H5 through H7).[7] At the bottom level of the data communication hierarchy shown in Figure 2 is a network interface circuit which is typically formed as a computer card, and which is abbreviated as "NIC" in Figure 2. The NIC represents the hardware interface, or so-called "link layer,"[8] and it has a unique hardware physical address, abbreviated in the Specification as HPA.[9] At the middle level of the data communication hierarchy is a protocol handler, which by example includes the internet protocol ("IP") and the transport control protocol ("TCP"). The IP and TCP standards are typically implemented in an ordered level manner such that the TCP protocol is closer to the application level and the IP protocol is closer to the physical network connection level. Due to this ordering, a packet of information received from the network is first examined according to

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5 Specification, *supra*, page 3, lines 1 through 18.
6 Specification, *supra*, page 7, lines 1 through 6.
7 Specification, *supra*, page 8, lines 17 through 18.
8 Specification, *supra*, page 8, lines 24 through 28.

the IP standard, and then to the standard overlying the IP standard such as the TCP standard.[10] A computer complying with the IP standard has an assigned IP address, abbreviated in the Specification as IPA.[11] Thus, each host computer has an address pairing that includes a hardware physical address, HPA, and an associated respective protocol address, IPA.[12] Finally, the top level of the data communication hierarchy is an application program.[13] Thus, for an application program to communicate to its corresponding network, a packet (or packets) of data is formed and organized according to the TCP or other protocol at that level, then according to the IP of the host computer, and lastly altered if appropriate by the NIC to communicate the packet along the network medium. Conversely, if a packet is received by a host computer along a network medium, the packet is first analyzed at the NIC level, then the IP level, then the TCP (or other protocol) level if passed on by the NIC and IP levels, and ultimately may reach the application program.[14]

Figure 3 demonstrates the hierarchy of data communications of the inventive link layer computer H4, that is, the computer connected to both of the different types of networks.[15] In certain respects, the link layer computer hierarchy resembles that of the other computers (see Figure 2), but certain items are duplicated to accommodate the connection to two different types of networks.[16] Thus, the link layer computer H4 includes two NICs, one corresponding to each type of network to which the computer is connected (e.g., Ethernet NIC; 1394 NIC). Similarly, the link layer computer H4 includes two protocol handlers (e.g., Ethernet TCP/IP; 1394 TCP/IP), one corresponding to each type of NIC to which the computer is connected. In addition, however, the link layer computer H4 further includes a link layer protocol shown at the same hierarchical level as is the Ethernet and 1394 IP protocols.[17] The link layer protocol of the link layer host computer H4 permits internetwork communication of data packets between

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9 Specification, *supra*, page 10, line 29.
10 Specification, *supra*, page 10, lines 2 through 12.
11 Specification, *supra*, page 10, lines 30 to page 11, line 2.
12 Specification, *supra*, page 11, lines 1 and 2.
13 Specification, *supra*, page 11, lines 12 through page 12, line 5.
14 Specification, *supra*, page 12, lines 8 through 16.
15 Specification, *supra*, page 12, lines 18 through 20.
16 Specification, *supra*, page 12, lines 20 through 22.
17 Specification, *supra*, page 13, lines 10 through 12.

those two different networks,[18] while at the same time the link layer host computer H4 does not interfere with intranetwork communications. Particularly, the link layer computer H4 is operable to perform the methodology of Figures 4A and 4B to indeed facilitate such communications.

The link layer protocol operates in conjunction with receiving and responding to address pairing requests such as the address resolution protocol ("ARP") request as is known under the IP standard, so the Specification introduces various aspects relating to such requests in a single network.[19] Under the IP standard, an ARP request is issued by a source host computer to determine the HPA of a destination host computer attached to the same network, where the request is based on the IPA of that same destination host computer.[20] In other words, and for later contrast to one of the Examiner's position in this application, ARP starts with the protocol level address (e.g., IPA) and from it seeks the hardware physical address HPA. To accomplish this, the source host computer sends an ARP request to all computers on its network (by way of a so-called "broadcast") and in that request it includes a destination IPA of the desired destination host computer.[21] Next, only the host computer having an IPA matching the destination IPA in the ARP request responds,[22] and in its response it has an address pair, where one address in that pair is its own IPA (which was broadcast in the preceding request) and the other address in that pair is its own HPA.[23] As a result, the host that sent the request receives this response that includes the address pair, and it enters it into an address pairing table so that the pairing is thereafter known to that requesting host computer.[24]

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18 Specification, *supra*, page 14, lines 2 through 5.
19 Specification, *supra*, page 16, lines 3 *et seq*.
20 Specification, *supra*, page 16, lines 8 through 11.
21 Specification, *supra*, page 16, lines 13 through 15.
22 Specification, *supra*, page 16, lines 17 through 18.
23 Specification, *supra*, page 16, lines 22 through 26.
24 Specification, *supra*, page 16, lies 26 through 30.

The preceding discussion of address pairing requests relates to a single network, whereas the link layer of host computer H4 involves two interconnected networks.[25] The remainder of the steps of Figure 4, as implemented by the link layer protocol handler of the link layer computer H4, demonstrates how it facilitates the use of address pairing across *two different* networks. Step 24 determines whether an address pairing is received and, if so, step 26 is reached.[26] Step 26 determines whether the IPA in the received pairing request is the IPA of the link layer computer H4. If so, then truly the pairing request was from a source host computer on either network that is seeking the HPA of the link layer computer H4 and, as a result, the link layer protocol as shown in step 30 ignores the pair request packet because the separate protocol handler (e.g., TCP/IP) for that same computer H4 will handle the request.[27] In contrast, if the link layer computer H4 receives an address pairing request and the IPA of that request is not the IPA of that link layer computer (i.e., the request is directed to a different destination computer), then to discern whether it should intervene as detailed below, the link layer computer H4, by its link layer protocol handler and in steps 32, 34, and 36, determines if that address pairing request is either an intranetwork request or an internetwork request. If the request is intranetwork, then step 38 causes the link layer computer H4 to ignore the request, because that request will be serviced by another computer on the same network that communicated the request. If, however, the request is an internetwork request, then in step 40 the link layer computer intervenes as detailed below.

Recalling that when a source host computer sends an address pair request with an IPA to a destination host computer, the source host computer expects to receive back that IPA along with the HPA of the destination host computer having that IPA; in a compatible manner, therefore, in a first action shown in step 40, the link layer protocol handler replies to the request with an address pairing, again where that pairing includes the destination IPA of the request as well as an HPA to be paired with the destination IPA. However, the HPA returned by the link layer protocol to the source host computer request is the HPA of link layer computer H4 rather

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25 Specification, *supra*, page 17, lines 1 through 3.
26 Specification, *supra*, page 17, lines 15 through 18.
27 Specification, *supra*, page 17, line 19 through page 18, line 3.

than, as in the prior art, the HPA of the destination host computer that was identified by the request.[28] In response, the source host computer receives this address pair into its own address pairing table so that its subsequent communications according to this table will pair the IPA value it sent with the HPA of the link layer computer rather than with the HPA of the actual destination computer that it had sought in the request.[29] In step 40 the link layer protocol handler takes a second action. Particularly, with respect to the address pairing request it received from a source host computer, it forwards to the internetwork destination host computer identified by the IPA in the request an address pairing for entry into the address pairing table of that destination host computer. More specifically, this address pair includes the IPA of the source host computer which issued the address request, and paired with that source IPA is the HPA of the link layer computer H4 rather than, as in the prior art, the HPA of the source host computer. Thus, the destination host computer receives this pair and enters it into its address pairing table. Thus, for the destination host computer, it too has an address pair that associates an IPA with an HPA, but unlike the prior art where the IPA and HPA were for the same computer, here the IPA is for the source host computer while the HPA is for the link layer computer H4.[30]

Given the intervention take above by the link layer protocol of the link layer computer H4, later internetwork communications are possible in a manner that is transparent to the source host computers on either network and without the use of a router as explained earlier. Specifically, as shown in Figure 4B, the link layer protocol handler of the link layer computer H4 also identifies whether a newly-received data packet is according to a protocol (e.g., IP protocol), and if so, various successive steps may occur. Per the protocol, the newly-received data packet will have the protocol address (e.g., IPA) of the source host computer as well as the protocol address (e.g., IPA) of the destination host computer. Thus, in step 42 the link layer protocol handler of the link layer computer H4 determines if the destination protocol address is that of the link layer computer H4 and, if so, then truly the protocol packet was from a source host computer on either network that is attempting to communicate with the link layer

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28 Specification, *supra*, page 19, lines 18 through 29.

29 Specification, *supra*, page 19, line 30 through page 20, line 5.

computer H4 and, as a result, the link layer protocol as shown in step 30 ignores the data packet because the separate protocol handler (e.g., TCP/IP) for that same computer H4 will handle the request.[31] In contrast, if the link layer computer H4 receives a protocol data packet and the IPA of that packet is not the IPA of that link layer computer (i.e., the communication is directed to a different destination computer other than computer H4), then similar to the earlier discussion but for a different purpose, in steps 46, 48, and 50 the link layer protocol of the link layer computer H4 determines if the protocol communication is either an intranetwork request or an internetwork request.[32] If the communication is intranetwork, then again step 38 causes the link layer computer H4 to ignore the data packet because that request will be serviced by another computer on the same network as that of the source computer that communicated the packet.[33]

Finally, steps 52 and 54 indicate the operation of the link layer protocol handler of the link layer computer H4 when an internetwork protocol data packet has been received by the link layer computer, that is, it was sent by a source host computer on one network and intended for a destination host computer on the other network, where the link layer computer has determined this intention because of the protocol destination address (e.g., IPA) in the protocol data packet. First, note that such a packet is reviewable the link layer protocol handler of the link layer computer H4 because the source host computer that sent it was previously directed by the link layer protocol handler to pair the HPA of the link layer protocol computer H4 with the IPA of this internetwork destination host computer. Thus, the NIC of the link layer computer H4 permits this packet to reach the protocol level of the link layer computer H4. Second, because the packet is determined to be an internetwork packet, in step 52 or step 54 the link layer protocol handler changes the destination HPA of the IP communication so that the data packet communication thereafter will be received by the proper destination host computer.[34] Specifically, the link layer protocol handler replaces the HPA in the IP communication (which was that of the link layer computer H4) with the HPA that corresponds

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30 Specification, *supra*, page 20, lines 8 through 19.
31 Specification, *supra*, page 22, lines 8 through 13; page 23, lines 1 through 11.
32 Specification, *supra*, page 23, line 12 through page 24, line 4.
33 Specification, *supra*, page 24, lines 5 through 14.
34 Specification, *supra*, page 25, lines 9 through 11.

to the true destination host computer. Note at this point, therefore, that the link layer protocol handler creates a match between the actual IPA and the actual HPA of the destination host computer. Thereafter, the link layer computer H4 forwards the packet to the network on which the destination host computer is located,[35] and because the IP communication now has the IPA and the HPA of the true destination host computer, then the destination host computer will properly respond to the communication.[36] The Specification demonstrates that this operation occurs accurately whether transmitting from the Ethernet network to the 1394 network (step 52) or whether transmitting from the 1394 network to the Ethernet network (step 54).[37]

B. Relating Overview to Independent Claims

Independent claims 30 and 51 are pending in this appeal. Each is set forth below, along with reference numbers of exmples, in parenthesis, corresponding the elements of the claim to the Specification and consistent with the Overview provided above.

1. Claim 30

30. A link layer gateway computer (H4) operable to communicate a data packet from a source host computer selected from one of a plurality of host computers (H1-H3) coupled to a first network medium (ETHERNET) to a destination host computer selected from one of a plurality of host computers (H5-H7) coupled to a second network medium (1394), wherein:

a first network interface circuit (ETHERNET NIC) enables connection of said link layer gateway computer (H4) to said first network medium (ETHERNET); and

a second network interface circuit (1394 NIC) enables connection of said link layer gateway computer (H4) to said second network medium (1394);

the link layer gateway computer (H4) has an assigned protocol address (e.g., IPA) and a computer protocol handler (ETHERNET TCP/IP and/or 1394 TCP/IP);

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35 Specification, *supra*, page 26, lines 13 through 15.
36 Specification, *supra*, page 25, lines 24 through 29.
37 Specification, *supra*, page 28, lines 3 through 28.

responsive to either of the first and second network interface circuits receiving a data packet, the computer protocol handler (ETHERNET TCP/IP and/or 1394 TCP/IP) evaluates a destination protocol address (e.g., IPA) in the received data packet;

the computer protocol handler (ETHERNET TCP/IP and/or 1394 TCP/IP) is responsive to the received data packet if the destination protocol address (e.g., IPA) corresponds to the assigned address of the link layer gateway computer;

wherein the link layer gateway computer is programmed to execute (20) a link layer protocol handler (LINK LAYER PROTOCOL) coupled to communicate with each of the first and second network interface circuits;

wherein, responsive to either of the first and second network interface circuits receiving a data packet comprising an address pairing communication (ARP; 24), the link layer protocol handler evaluates (26) a destination protocol address (e.g., IPA) in the received data packet;

wherein, responsive to determining (26) that the destination protocol address does not correspond to the assigned address of the link layer gateway computer (H4), the link layer protocol handler (LINK LAYER PROTOCOL) determines (32, 34, 36) if a source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium;

wherein:

responsive to the link layer protocol handler (LINK LAYER PROTOCOL) determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol handler (40) communicates a reply data packet to the source host computer which transmitted the received data packet;

the reply data packet comprises an address pairing (HPA, IPA); and

the address pairing comprises the destination protocol address (IPA) and a hardware physical address (HPA) corresponding to a selected one of the first network interface circuit

(EHTERNET NIC) or the second network interface circuit (1394 NIC), wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet.

2. ***Claim 51***

51. A computer (H4), comprising:

a first protocol handler (ETHERNET TCP/IP) coupling a first network interface circuit (ETHERNET NIC) to an application program (APPLICATION PROGRAM), wherein said first network interface circuit enables connection of said computer to a first network medium (ETHERNET);

a second protocol handler (1394 TCP/IP) coupling a second network interface circuit (1394 NIC) to an application program (APPLICATION PROGRAM), wherein said second network interface circuit enables connection of said computer to a second network medium; and

a link layer protocol (LINK LAYER PROTOCOL) coupling said first protocol handler and said first network interface circuit to said second protocol handler and said second network interface circuit;

wherein:

said computer (H4) has an assigned protocol address (e.g., IPA);

responsive to either of the first and second network interface circuits receiving a data packet, one of the first and second protocol handlers evaluates a destination protocol address (destination IPA) in the received data packet;

one of the first and second protocol handlers is responsive to the received data packet if the destination protocol address corresponds to the assigned address of the computer;

the computer is programmed to execute (20) the link layer protocol coupled to communicate with each of the first and second network interface circuits;

responsive to either of the first and second network interface circuits receiving a data packet comprising an address pairing communication (24), the link layer protocol evaluates (26) a destination protocol address in the received data packet; and

responsive to determining (26) that the destination protocol address does not correspond to the assigned address of the computer, the link layer protocol handler determines (32, 34, 36) if a source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium (ETHERNET) or the second network medium (1394);

responsive to the link layer protocol determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol (40) communicates a reply data packet to the source host computer which transmitted the received data packet;

the reply data packet comprises an address pairing (HPA, IPA); and

the address pairing comprises the destination protocol address (IPA) and a hardware physical address (HPA) corresponding to a selected one of the first network interface circuit (EHTERNET NIC) or the second network interface circuit (1394NIC), wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet.

vi. Grounds of rejection to be reviewed on appeal

A. Rejections Under 35 U.S.C. § 103

Claims 30 through 31, 42 through 46, 49 through 60, 66 through 70, and 73 through 74 are rejected under 35 U.S.C. § 103 over Templin (US 5,781,550, referred to as Templin '550) in view of Request for Comments 903 (referred to as Finlayson). Claims 32, 35-36, and 61 are rejected under 35 U.S.C. § 103 over Templin '550 in view of Finlayson in further view of Krause et al (US 5,590,285; referred to a Krause '285). Claims 33-34 and 62-63 are rejected under 35 U.S.C. § 103 over Templin '550 in view of Krause in further view of Hoffman et al. Claim 37 is

rejected under under 35 U.S.C. § 103 over Templin '550 in view of Finlayson in further view of Wrights, Jr et al. (US 5,857,201; referred to a Wright '201).

B. Rejections Under 35 U.S.C. § 101

Claims 30 through 37, 42 through 46, and 49 through 50 are rejected based on obviousness-type double patenting over claims 1 through 15 of U.S. Patent 6,657,999.[38] However, later in the same section of the Action, the Examiner also discusses claims 55 through 56, 59, and 61 through 64; thus, presumably those claims stand rejected under this same basis and are also addressed below.

vii. Argument

A. Rejections Under 35 U.S.C. § 103

Claims 30 through 31, 42 through 46, 49 through 60, 66 through 70, and 73 through 74 are rejected under 35 U.S.C. § 103 over Templin (US 5,781,550, referred to as Templin '550) in view of Request for Comments 903 (referred to as Finlayson). Claims 32, 35-36, and 61 are rejected under 35 U.S.C. § 103 over Templin '550 in view of Finlayson in further view of Krause et al (US 5,590,285; referred to a Krause '285). Claims 33-34 and 62-63 are rejected under 35 U.S.C. § 103 over Templin '550 in view of Krause in further view of Hoffman et al. Claim 37 is rejected under under 35 U.S.C. § 103 over Templin '550 in view of Finlayson in further view of Wrights, Jr et al. (US 5,857,201; referred to a Wright '201). Appellant traverses these rejections.

It is axiomatic, in the patent law, that a *prima facie* obviousness determination of patent claims requires teachings from the prior art itself to appear to have suggested the claimed subject matter to a person of ordinary skill in the art.[39] If the Examiner fails to establish a *prima facie* case, the rejection is improper and should be overturned on appeal.[40] Appellant respectfully submits that the final rejection fails to meet this standard. Instead, the teachings of the applied prior art, properly interpreted, fall short of the requirements of each of the claims,

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[38] *See*, final Office Action mailed July 13, 2005, Item 3.
[39] *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993).
[40] *Id.*

and there is no suggestion from the prior art to modify those teachings in such a manner as to reach the claims on appeal in this case.

1. ***Independent claim 30, and dependent claims 31 through 37 and 42 through 45.***

With respect to Templin '550 and independent claim 30, the Examiner indicates that it teaches various things. Among these, the Examiner cites in part to the DETAILED DESCRIPTION in Templin '550 for various items of claim 30. However, for other recitations of claim 30, the Examiner cites to the BACKGROUND in Templin '550, where there is no teaching in Templin '550 that those items cited in the BACKGROUND apply to its own embodiments. For example, at the top of Page 4 of the final Office Action, the Examiner cites to "col 2/lines 57-61" and "col 1/lines 42-53, 63-column 2/line 9." Appellant respectfully traverses this attempt by the Examiner to combine the Templin '550 BACKGROUND prior art with the Templin '550 preferred embodiments. Indeed, the BACKGROUND language cited by the Examiner on "col 2/lines 57-61" is shortly thereafter ***actually criticized*** by Templin '550 on its column 3, lines 3 through 8, where it notes that the cited prior art approach "creates an additional complexity..." From this criticism, it is certainly fair to say that the Templin BACKGROUND is teaching away from these very items, thereby discouraging the skilled artisan from combining those teachings with what is later set forth in the Templin '550 DETAILED DESCRIPTION; yet, the Examiner then combines the criticized elements with elements from the DETAILED DESCRIPTION, to arrive in part at the claimed invention. A *prima facie* case of obviousness can be rebutted if the Appellant can show that the prior art "in any material aspect" teaches away from the claimed invention.[41] A reference can be said to teach away when a person of ordinary skill in the art, upon reading the reference, "would be led in a direction divergent from the path that was taken by the Appellant".[42] Thus, on this basis alone, Appellant submits that *if* the Examiner has made a *prima facie* case of obviousness, such a case is rebutted by this teaching away. Further, as

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[41] *In re Geisler et al.*, 116 F.3d 1465, 1469, 43 U.S.P.Q.2d 1362 (Fed. Cir. 1997), *citing In re Malagari*, 499 F.2d 1297, 1303, 182 USPA 549, 553 (CCPA 1974).
[42] *In re Gurley,27* F.3d 551, 553, 31 U.S.P.Q.2d 1130 (Fed. Cir. 1994).

demonstrated below, Appellant respectfully submits that no such *prima facie* case has been shown.

Claim 30 recites, among other things, the following:

> wherein, responsive to determining that the destination protocol address does not correspond to the assigned address of the link layer gateway computer, the link layer protocol handler determines if a source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium;
>
> wherein:
>
> responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol handler communicates a reply data packet to the source host computer which transmitted the received data packet;
>
> the reply data packet comprises an address pairing; and
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> the address pairing comprises the destination protocol address and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet.

Certainly there are items in Claim 30 that precede the above quoted language that are admitted by the Specification to be, standing alone, known features; however, with respect to the language set forth above, additional and important features/functionality are provided yet the Examiner fails not only to demonstrate how such is shown in the art, but the Examiner also fails to provide sufficient clarity of how the art relates at all to these aspects. Specifically, with respect to Templin '550 and independent claim 30, the Examiner states the following near the bottom of Page 4 of the final Office Action and at the conclusion of the discussion of Templin' 550 with respect to claim 30:

> "although Templin discloses a gateway computer relaying address pairing communications (i.e., data packet comprising source and destination addresses) between a first and second network medium between host computers coupled to their respective networks via their corresponding network interface circuits and the communication protocol; wherein host computer use of address-pairing communications for determining the IP address between host computers via address resolution protocol, however Templin does not explicitly teach where the communications received by the gateway is a protocol-address pair request, wherein a request for the protocol address of a computer host given its physical address [sic]."

With all due respect to the Examiner and the complexities of the preferred embodiments as well as that of the prior art, Appellant respectfully submits that any lack of clarity or understanding from that art cannot be shifted as a burden on to the Appellant. Appellant requested a clarification to the above Examiner quotation in its Request For Reconsideration, but the Examiner did not provide any. Thus, in the present Appeal, Appellant is left to speculate to the Examiner's meaning. The Examiner's language does even parallel that of claim 30. As a result, it is difficult if not impossible to determine the rationale of the Examiner's rejection and to formulate a full response thereto. Thus, Appellant respectfully submits that it is not being afforded the proper procedure in connection with responding to the rejection, but without prejudice or disclaimer Appellant nonetheless herein attempts to respond to same.

As a first example of the lack of clarity and the resulting failure of the Examiner to show claim elements, the Examiner refers to "address pairing communications (i.e., data packet comprising source and destination addresses)." Presumably, therefore, the Examiner is stating that an address pairing for purposes of claim 30 is the parenthetical items of the "data packet comprising source and destination addresses." However, this definition is inconsistent with that provided in the present Specification, which makes clear that an address pairing includes a protocol address (e.g., IPA) and a hardware physical address HPA. Further, claim 30 explicitly recites "an address pairing" and states that it "comprises the destination protocol address and a

hardware physical address." Thus, the Examiner at this point in the rejection is not providing a proper definition for the "address pairing."

As another example, and in direct conflict to the preceding, at the conclusion of the Examiner's statement as quoted above, the Examiner appears to change the meaning of "address pairing," where it is stated that "Templin does not explicitly teach where the communications received by the gateway is a protocol-address pair request, wherein a request for the protocol address of a computer host given its physical address [sic]." Presumably, then, at this point the Examiner is no longer taking the position that the address pairing is a "source and destination address." Thus, it is impossible for Appellant to understand and, hence, reply to the Examiner contention of what the prior art is showing under the Examiner's analysis.

Assuming for the sake of argument that the Examiner's positions on Templin '550 can be resolved, the Examiner evidently concedes that certain elements of claim 30 are not in Templin '550, but the Examiner states that Finlayson "suggests" a concept. Appellant respectfully submits that herein lies the first deficiency of the citation to Finlayson. Finlayson on its face is a "request for comment" and it is quite deficient in details. Thus, Appellant respectfully submits that Finlayson does not ***teach*** or ***describe*** the aspects indicated by the Examiner, as reflected by the Examiner noting that at best Finlayson only "suggests" certain aspects.

Also with respect to Finlayson and independent claim 30, the Examiner does not relate with one-to-one correspondence the teachings of Finlayson to the elements of claim 30. Appellant requests greater clarification so that it may fully respond.

Still further with respect to Finlayson, it appears from its brief request for comment that it is directed to a "workstation" learning ***its own*** protocol address when already knowing ***its own*** physical address. Finlayson states its on page 1, with emphasis added by the undersigned: "a method for workstations to dynamically find their protocol address..., when they know only ***their*** hardware address..." Finlayson also states its on page 1, "Network hosts ...frequently do not know ***their*** protocol addresses when booted; they often know only ***their*** hardware interface addresses." Thus, Finlayson is not at all directed to the hardware recited in claim 30, namely, a

"link layer gateway computer operable to communicate a data packet from a source host computer selected from one of a plurality of host computers coupled to a first network medium to a destination host computer selected from one of a plurality of host computers coupled to a second network medium." Instead, at best Finlayson deals with the relationship between a workstation and a server. Moreover, as recited at the end of claim 30, the claimed gateway computer "link layer protocol handler communicates a reply data packet to the source host computer which transmitted the received data packet." So, the reply is from the gateway computer to a different computer, namely, the source host computer. Further, the "reply data packet comprises an address pairing" and that "address pairing comprises the destination protocol address" of a "destination host computer designated by the destination protocol address" and also a "hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit" of the gateway computer. Simplified, therefore, the reply in claim 30 of the address pairing relates to ***three different computers***, namely, the claimed "source host computer," the claimed "destination host computer," and the claimed "link layer gateway computer," and the claimed "address pairing" relates to three different computers, namely, the destination host computer designated by the destination protocol address," as provided by the "source host computer," and a "hardware physical address corresponding to [part] of the gateway computer." Finlayson in no way relates to these matters.

Looking at the preceding in the alternatives: (1) there is no motivation to combine Templin' 550 and Finlayson; (2) there is certainly no suggestion in Finlayson to combine it with Templin' 550; and (3) even if the two references were so combined, they would not provide the resultant limitations set forth in claim 30.

In addition to the preceding, note that all of the Examiner's rejections based on Section 103 are based at least in part on Templin '550 and many on Finlayson. The deficiencies noted above as to these references therefore apply to all of the claims rejected based on one or both of those references, and those deficiencies also are not overcome but the Examiner's citation to any other reference.

In view of the above, Appellant respectfully submits that the final rejection of claims 30 and dependent claims 31 through 37, 42 through 46, 49, and 50 are in error and should be reversed.

2. ***Claim 46***

Claim 46 recites, among other things, the following element:

> prior to communicating the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer, the link layer protocol handler changes the hardware physical address to match the destination hardware physical address.

The Examiner contends this element is shown by Templin '550 at its column 10, lines 45 through 59, which is actually *part of a claim* 7 in Templin '550 rather than elsewhere in its text. This further highlights the point above, that the Examiner is taking part of the presumed Templin '550 invention (since the text is from a claim), and then combining it with another citation to the prior art discussion in Templin '550. Second, even if this combination is permissible, the cited column 10 text of Templin '550 does not show the recited element, as detailed below.

The text cited by the Examiner from claim 7 of Templin '550 reads as follows:

> 7. A computer implemented method for communicating packets between a trusted computer and an untrusted computer connected by a gateway having a gateway address, each packet including a source address, a destination address and a payload, comprising the steps of:
>
> receiving, in the gateway, a first packet having a source address of the trusted computer, the destination address, and a first payload and excluding the gateway address;
>
> sending, from the gateway, a second packet having a source address of the gateway, a destination address of the untrusted computer and the first payload if the first packet has the destination address of the untrusted computer to enable the trusted computer to securely communicate with the untrusted computer and further; ...

The text cited by the Examiner has nothing whatsoever to do with what is recited in claim 46, namely, that the "protocol handler changes the hardware physical address to match the destination hardware physical address." The Examiner gives no reason or recitation as to how the Templin '550 claim language relates to a "hardware physical address." Indeed, Templin '550 appears to describe in column 8, and in its Figure 5, a manner of having a gateway intercept packets from a trusted host before potentially sending them on to an untrusted host. At column 8, lines 28 through 32, Templin '550 states the following:

> ***Using the Internet address information***, the proxy server 340 can establish a second session between itself and the untrusted host 160, while maintaining the initial session with the trusted host 150. This means, in contrast with prior art non-transparent proxy servers, that the proxy server 340 becomes an invisible "middleman" for packet interchange between the trusted host 150 and untrusted host C 160, with respect to the host A 150 (emphasis added).

Thus, to accomplish its gateway function between a trusted computer and an untrusted computer, it could well be that Templin '550 is using the "Internet address" and does not affect the hardware physical address at all. In any event, because Templin' 550 does not show the claim 46 element with respect to the hardware physical attributes, Appellant respectfully submits that the final rejection of claim 46 is in error and should be reversed.

3. *Claim 49*

Claim 49 recites:

The link layer gateway computer of Claim 30, wherein:

responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination protocol address; and

the address pairing data packet comprises a source protocol address corresponding to the source host computer which transmitted the received data

packet and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the destination host computer.

Thus, with respect to claim 49, the recited "address pairing" is being communicated "to the destination host computer designated by the destination protocol address." With respect to the last sub-paragraph of claim 49, the Examiner states the following:

> "said gateway configured to reply to the requester (source host computer) of an address pairing communicating for information associated with a destination host computer, the reply comprising the source protocol and physical hardware address, the destination protocol and physical hardware address and the gateway protocol and physical hardware address (RFC: p. 3)."

First, stated simply, the preceding quote is virtually indecipherable when compared to the language from claim 49?

Second, the Examiner's quote appears directed to a "reply to the requester (source host computer)." However, claim 49 recites that the "the link layer protocol communicates an address pairing data packet to the destination host computer." Thus, the communication is to a completely different computer, the destination computer, than is cited by the Examiner, which is the source computer.

Third, the Examiner makes the citation to "(RFC: p. 3)." This citation is not introduced, so it is unclear to what reference the Examiner is pointing. Perhaps it is Finlayson, since it is a "Request for Comments," but if this is the case, the language set out by the Examiner is not on the page 3 to which the Examiner cites?

Based on the preceding, Appellant respectfully submits that the final rejection of claim 49 is in error and should be reversed.

4. Claim 50

With respect to claim 50, the entirety of the Examiner's comments are that "this claim comprises the combined limitations of claims 30 and 45, same rationale of rejection is applicable." This statement is inaccurate and, hence, cannot fairly support a final rejection of claim 50. Claim 45 depends from claim 43, which depends from claim 42, which depends from claim 30. Claim 50 depends directly from claim 30. Claim 50 includes the recitation that "the link layer protocol communicates a reply data packet to the source host computer which transmitted the received data packet." This recitation is not in any of claims 42, 43, or 45, which are relevant since the Examiner cites to claim 45. Accordingly, by definition, the scope of claim 50 differs from that cited by the Examiner, that is, from "the combined limitations of claims 30 and 45." Still further, claim 50 includes the recitation that "the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination IP address" This recitation is also not in any of claims 42, 43, or 45. Accordingly, also by definition, the scope of claim 50 differs from that cited by the Examiner, that is, from "the combined limitations of claims 30 and 45."

Based on the preceding, since claim 50 differs considerably in scope from claims 30 and 45, the Examiner is misplaced in asserting that claim 50 is rejected for the same reasons as claims 30 and 45. Appellant thus respectfully submits that the final rejection of claim 50 is in error and should be reversed.

5. Independent claim 51, and dependent claims 52 through 63 and 66 through 69

The Examiner rejects claim 51 by stating it "comprises the same limitations as discussed on claim 30" and asserts that the "same rationale of rejection is applicable." For at least then the reasons set forth above with respect to claim 30, Appellant respectfully submits that the final rejection of claim 51 and dependent claims 52 through 63, and 66 through 69 are in error and should be reversed.

6. Claim 70

Claim 70 recites, among other things with respect to the computer, that "prior to communicating the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer, the link layer protocol changes the hardware physical address to match the destination hardware physical address." For at least then the reasons set forth above with respect to claim 46, Appellant respectfully submits that the final rejection of claim 70 is in error and should be reversed.

7. Claim 73

Claim 73 recites, among other things with respect to the computer, that "the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination protocol address." For at least then the reasons set forth above with respect to claim 49, Appellant respectfully submits that the final rejection of claim 70 is in error and should be reversed.

8. Claim 74

Claim 74 recites, among other things with respect to the computer, that "the link layer protocol communicates a reply data packet to the source host computer which transmitted the received data packet" and "the reply data packet comprises an address pairing" that comprises "the destination protocol address and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit," and claim 74 further recites "the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination protocol address" where this latter address pairing comprises "a source protocol address corresponding to the source host computer which transmitted the received data packet and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit."

For at least then the reasons set forth above with respect to claims 30 and 73, Appellant respectfully submits that the final rejection of claim 74 is in error and should be reversed.

B. Rejections Under 35 U.S.C. § 101

Claims 30 through 37, 42 through 46, and 49 through 50 are stated to be rejected based on obviousness-type double patenting over claims 1 through 15 of U.S. Patent 6,657,999.[43] However, later in the same section of the Action, the Examiner also discusses claims 55 through 56, 59, and 61 through 64; thus, presumably those claims stand rejected under this same basis and are also addressed below.

"In determining whether a nonstatutory basis exists for a double patenting rejection, the first question to be asked is - does any claim in the application define an invention that is merely an obvious variation of an invention claimed in the patent? If the answer is yes, then an "obviousness-type" nonstatutory double patenting rejection may be appropriate."[44] "Since the analysis employed in an obviousness-type double patenting determination parallels the guidelines for a 35 U.S.C. 103(a) rejection, the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are employed when making an obvious-type double patenting analysis."[45] "Any obviousness-type double patenting rejection should make clear: (A) The differences between the inventions defined by the conflicting claims - a claim in the patent compared to a claim in the application; and (B) The reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue would have been an obvious variation of the invention defined in a claim in the patent."[46] The Examiner has made no such analysis and has made no statement at all with respect to "[t]he reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue would have been an obvious variation," and as shown below, even if such an analysis is

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43 *See*, final Office Action mailed July 13, 2005, Item 3.
44 Manual Of Patent and Examining Procedure, § 804.II.B.1
45 *Id.*
46 *Id.*

made, it demonstrates that the present claims do not constitute obviousness-type double patenting over U.S. Patent 6,657,999.

With the previous amendments to the pending claims dated May 20, 2005, there are considerable differences between them and the cited U.S. Patent 6,657,999, and the Examiner has not addressed these differences in view of the legal framework set forth above. Thus, as detailed below, the obviousness-type double patenting rejections should be withdrawn.

1. ***Independent claim 30, and dependent claims 31 through 37, 42 through 46, 49, and 50.***

The Examiner contends that "claims 30-31" are substantially the same as claim 1 of U.S. Patent 6,657,999. This is simply inaccurate and, as a result, cannot support the Examiner's rejection Under 35 U.S.C. § 101, as demonstrated below.

In part, claim 30 of the present application recites the following:

> responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol handler communicates a reply data packet to the source host computer which transmitted the received data packet;
>
> the reply data packet comprises an address pairing; and
>
> the address pairing comprises the destination protocol address and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet.

In contrast, Claim 1 of U.S. Patent 6,657,999 reads as follows:

> 1. A network configuration, comprising:
> a first 1394 network medium;

> a plurality of host computers coupled to the first network medium;
>
> a second network medium;
>
> a plurality of host computers coupled to the second network medium;
>
> a link layer gateway computer coupled to the first network medium and coupled to the second network medium; said link gateway computer operable to communicate a data packet from a source host computer selected from one of the plurality of host computers coupled to the first network medium to a destination host computer selected from one of the plurality of host computers coupled to the second network medium, said link layer gateway computer operable to communicate a data packet from a source host computer selected from one of the plurality of host computers coupled to the second network medium to a destination host computer selected from one of the plurality of host computers coupled to the first network medium, said link layer gateway computer determining whether said data packet is addressed to a host computer on said first or second network medium; and blocking transmission of said data packet through said link layer gateway computer if said data packet is addressed to a host computer in the same network medium;
>
> determining at said gateway computer whether said data packet is addressed to said gateway computer; and
>
> responsive to a positive determination communicating between said source host and said gateway computer.

The above-quoted recitations of claim 30 are not, as the Examiner asserts, "substantially the same as claim 1 of that patent." Indeed, while these limitations are in claim 30 (and thus its dependent claims), there are no such limitations in claim 1 of U.S. Patent 6,657,999. Accordingly, the Examiner is also inaccurate in stating that "application claims 30-31 are broader than claim 1 of the patent."[47] Claim 1 of U.S. Patent 6,657,999 does not include "a reply data packet to the source host computer" as set forth in pending claim 30. Claim 1 of U.S. Patent 6,657,999 also does not include "an address pairing," along with the many details of that pairing as are set forth in pending claim 30. These are substantial elements in claim 30 of the present application and they do not appear in claim 1 of U.S. Patent 6,657,999. Moreover, as shown by Appellant earlier in section v.B.1 of this Brief, these items are not obvious in view of

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47 *See*, final Office Action mailed July 13, 2005, bottom of page 2.

the other prior art and, hence, for at least those reasons claim 1 of the present application is not obvious in view of claim 1 of U.S. Patent 6,657,999. The additional reference to claim 31 by the Examiner does not change in any way the points set forth above with respect to claim 30. Thus, these differences are clearly illustrative that the present double patenting rejection is in error and should be withdrawn

Further, claim 1 of U.S. Patent 6,657,999 includes elements that are not in claims 30 and 31 of the present application, which again indicates that the Examiner is not accurate in finding that the two are "substantially the same." For example, claim 1 of U.S. Patent 6,657,999 includes a "1394 network medium," whereas claims 30 and 31 of the present application do not include such a limitation(s). As another example, claim 1 of U.S. Patent 6,657,999 includes the recitation of "blocking transmission of said data packet through said link layer gateway computer if said data packet is addressed to a host computer in the same network medium," whereas claims 30 and 31 of the present application do not include such a limitation(s). For these additional reasons, the double patenting rejection of claims 30 and 31 over claim 1 of U.S. Patent 6,657,999 is in error and should be withdrawn

Claims 32 through 37, 42 through 46, 49, and 50 depend from claim 30 and, thus, for at least the reasons set forth above with respect to claim 30, the double patenting rejection of claims 30 and 31 over claim 1 of U.S. Patent 6,657,999 is in error and should be withdrawn. Further, it is noted that the Examiner provides no separate reasoning with respect to rejecting claims 42 through 46, 49, and 50 with respect to any double patenting analysis, so presumably those claims are not separately rejected under this basis.

2. Claims 51 through 63, 66 through 70, and 73 through 74.

The Examiner provides no analysis at all for rejecting claims 51 through 54, 57, 58, 60, 66 through 70, 73, and 74 based on double patenting and, thus, to the extent such claims are rejected under such a basis,[48] that rejection should be withdrawn.

3. Claims 55, 56, and 59

The Examiner contends that "claim [sic] 55-56 and 59 of the application are the same as claim 16 of the patent" (referring to U.S. Patent 6,657,999). This also is inaccurate and, as a result, cannot support the Examiner's rejection Under 35 U.S.C. § 101, as demonstrated below.

Claim 55 depends from claim 53, which depends from claim 51. First, claim 51 recites a computer. In contrast, claim 16 of U.S. Patent 6,657,999 recites a "computer-readable memory." Thus, at solely the preamble of the respective claims, they are not "the same" as contended by the Examiner. Second, claim 16 references a 1394 network, whereas claims 55, 56, and 59, indicated by the Examiner as "the same" as claim 16 of the patent, do not. Third, claim 55, through its dependence on claim 51, recites "a first protocol handler," "a second protocol handler," a "link layer protocol handler," and final to responsiveness of various criteria in claim 55, whereas claim 1 of U.S. Patent 6,657,999 does not refer to this multitude of different items – the Examiner has not stated anything as to why these additional elements are obvious in view of claim 16 in U.S. Patent 6,657,999 and, thus, this rejection should not stand and instead should be withdrawn.

Claims 32 through 37, 42 through 46, 49, and 50 depend from claim 30 and, thus, for at least the reasons set forth above with respect to claim 30, the double patenting rejection of claims 30 and 31 over claim 1 of U.S. Patent 6,657,999 is in error and should be withdrawn.

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[48] From the final Office Action mailed July 13, 2005, it is not clear whether the Examiner is rejecting these claims for double patenting as some of them are said to be rejected while others are not, yet for all of these claims no discussion supporting the rejection is provided.

4. Claims 61 through 63

The Examiner contends that "claims 61-64 [sic] of the application are the same as claims 1-15 of the patent" (referring to U.S. Patent 6,657,999). Presumably, the Examiner did not intend to include claim 64 since that claim is no longer pending as it was cancelled in the Amendment dated May 20, 2005. As to claims 61 through 63, no other rationale is provided by the Examiner and there is no discussion of an obviousness-type rejection. Without the Examiner having given a direct comparison of one claim to another, it is virtually impossible to respond to what the Examiner might have meant or what provides the basis or bases of the rejection.

For example, in comparing pending claims 61 through 63 to claim 1 of U.S. Patent 6,657,999, pending claims 61 through 63 depend directly from claim 51. Claim 51 recites "a first protocol handler," "a second protocol handler," a "link layer protocol handler," and finally to responsiveness of various criteria in claim 51, whereas claim 1 of U.S. Patent 6,657,999 does not refer to this multitude of different items; indeed, none of claims 2 through 12 of U.S. Patent 6,657,999 provides for any "reply packet" or an "address pairing" therein. Claim 13 of U.S. Patent 6,657,999 does include these items, but it depends from claim 6, which depends from claim 5, which depends from claim 1. Thus, a comparison could be made of claim 13 of U.S. Patent 6,657,999 with any of claims 61 through 63 of the present application. In this case, pending claim 51 is directed to a computer whereas claim 13 of U.S. Patent 6,657,999 is directed to a network configuration. Further, claim 13 includes numerous recitations that are not included in claim 51, such as a "1394 network medium" and an "IP address." Still further, claim 13 of U.S. Patent 6,657,999 recites the operation of "blocking transmission of said data packet through said link layer gateway computer if said data packet is addressed to a host computer in the same network medium." For all of these distinctions, the Examiner has not indicated how then claim 61 (or 62 or 63) is an obvious modification to claim 13 of U.S. Patent 6,657,999. Also in this endeavor, "[w]hen considering whether the invention defined in a claim of an application would have been an obvious variation of the invention defined in the claim of a patent, the disclosure of the patent may not be used as prior art."[49]

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[49] Manual Of Patent and Examining Procedure, § 804.II.B.1; *General Foods Corp. v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1279, 23 USPQ2d 1839, 1846 (Fed. Cir. 1992).

Given the preceding, the Examiner also has not demonstrated as to why the differences between pending claims 61 through 63 would be obvious in view of claims 1 through 15 of U.S. Patent 6,657,999 and, thus, the double patenting rejection of claims 61 through 63 should be withdrawn.

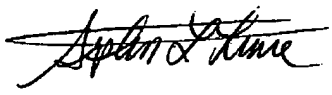
viii. Claims appendix

A claims appendix containing a copy of the claims involved in the appeal is attached hereto

ix. Conclusion

For the foregoing reasons, Appellant respectfully submits that the final rejection of claims 30 through 37, 42 through 46, 49 through 63, 66 through 70, 73, and 74 in this case is in error. Reversal of the rejection is respectfully requested.

Respectfully submitted,



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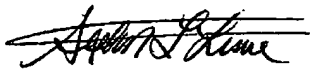

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/694,277	Confirmation No. 2806
Applicant:	:	Jason M. Brewer	
Filed	:	10/27/2003	
TC/A.U.	:	2142	
Examiner:	:	Prieto, Beatriz	
Docket No.	:	TI-25247A	
Customer No.	:	23494	

For: Interconnected Ethernet and 1394 Network

APPELLANT'S CLAIMS APPENDIX[50]

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Listing of Claims:

Claim 30. A link layer gateway computer operable to communicate a data packet from a source host computer selected from one of a plurality of host computers coupled to a first network

[50] On January 12, 2005, in preparation for the present appeal brief, two typographical matters were noticed in dependent claims 73 and 74, namely, those claims had been previously amended but were incorrectly indicate to depend from claim 50 whereas they should have been amended to depend from independent claim 51; accordingly, on January 12, 2005, Appellant submitted a Rule 116 Amendment to correct those matters. Since the January 12, 2005 amendment was offered before the filing of the present appeal brief, then under 37 CFR 41.33(a) that amendment may be admitted as provided under 37 CFR 1.116. Accordingly, for purposes of this brief, Appellant will assume that the January 12, 2005 will be entered into the record with the two corrected typographical matters.

medium to a destination host computer selected from one of a plurality of host computers coupled to a second network medium, wherein:

a first network interface circuit enables connection of said link layer gateway computer to said first network medium; and

a second network interface circuit enables connection of said link layer gateway computer to said second network medium;

the link layer gateway computer has an assigned protocol address and a computer protocol handler;

responsive to either of the first and second network interface circuits receiving a data packet, the computer protocol handler evaluates a destination protocol address in the received data packet;

the computer protocol handler is responsive to the received data packet if the destination protocol address corresponds to the assigned address of the link layer gateway computer;

wherein the link layer gateway computer is programmed to execute a link layer protocol handler coupled to communicate with each of the first and second network interface circuits;

wherein, responsive to either of the first and second network interface circuits receiving a data packet comprising an address pairing communication, the link layer protocol handler evaluates a destination protocol address in the received data packet;

wherein, responsive to determining that the destination protocol address does not correspond to the assigned address of the link layer gateway computer, the link layer protocol handler determines if a source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium;

wherein:

responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol handler communicates a reply data packet to the source host computer which transmitted the received data packet;

the reply data packet comprises an address pairing; and

the address pairing comprises the destination protocol address and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet.

31. The link layer gateway computer of Claim 30 further including the link layer gateway computer operable to communicate a data packet from a source host computer selected from one of said plurality of host computers coupled to said second network medium to a destination host computer selected from one of said plurality of host computers coupled to said first network medium.

32. The link layer gateway computer of Claim 30, wherein one of said first network medium and said second network medium is an Ethernet network.

33. The link layer gateway computer of Claim 30, wherein one of said first network medium and said second network medium is a 1394 network.

34. The link layer gateway computer of Claim 30, wherein one of said first network medium and said second network medium is an Ethernet network and the other of said first network medium and said second network medium is a 1394 network.

35. The link layer gateway computer of Claim 30, wherein one of said first network medium and said second network medium is a local area network.

36. The link layer gateway computer of Claim 30, wherein one of said first network medium and said second network medium is a wide area network.

37. The link layer gateway computer of Claim 30, wherein at least one of said first network medium and said second network medium is a wireless network.

42. The link layer gateway computer of Claim 30, wherein the link layer gateway computer is programmed to execute an application program coupled to communicate with the computer protocol handler.

43. The link layer gateway computer of Claim 42, wherein:

responsive to either of the first and second network interface circuits receiving a data packet comprising a protocol communication, the link layer protocol handler evaluates a destination protocol address in the received data packet; and

responsive to determining that the destination protocol address does not correspond to the assigned address of the link layer gateway computer, the link layer protocol handler determines if a source host computer which transmitted the received data packet and the destination host computer designed by the destination protocol address are not on a same one of either the first network medium or the second network medium.

44. The link layer gateway computer of Claim 43, wherein the computer protocol handler is independent of the link layer protocol handler.

45. The link layer gateway computer of Claim 43, wherein, responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol communicates the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer.

46. The link layer gateway computer of Claim 45, wherein:

the received data packet further comprises a hardware physical address;

the destination host computer comprises a network interface circuit coupled to one of either the first network medium or the second network medium;

the network interface circuit of the destination host computer is responsive to a destination hardware physical address; and

prior to communicating the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer, the link layer protocol handler changes the hardware physical address to match the destination hardware physical address.

49. The link layer gateway computer of Claim 30, wherein:

responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination protocol address; and

the address pairing data packet comprises a source protocol address corresponding to the source host computer which transmitted the received data packet and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the destination host computer.

50. The link layer gateway computer of Claim 30, wherein:

responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol communicates a reply data packet to the source host computer which transmitted the received data packet;

the reply data packet comprises an address pairing;

the address pairing comprises the destination protocol address and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network

interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet;

responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination IP address; and

the address pairing data packet comprises a source protocol address corresponding to the source host computer which transmitted the received data packet and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the destination host computer.

51. A computer, comprising:

a first protocol handler coupling a first network interface circuit to an application program, wherein said first network interface circuit enables connection of said computer to a first network medium;

a second protocol handler coupling a second network interface circuit to an application program, wherein said second network interface circuit enables connection of said computer to a second network medium; and

a link layer protocol coupling said first protocol handler and said first network interface circuit to said second protocol handler and said second network interface circuit;

wherein:

said computer has an assigned protocol address;

responsive to either of the first and second network interface circuits receiving a data packet, one of the first and second protocol handlers evaluates a destination protocol address in the received data packet;

one of the first and second protocol handlers is responsive to the received data packet if the destination protocol address corresponds to the assigned address of the computer;

the computer is programmed to execute the link layer protocol coupled to communicate with each of the first and second network interface circuits;

responsive to either of the first and second network interface circuits receiving a data packet comprising an address pairing communication, the link layer protocol evaluates a destination protocol address in the received data packet; and

responsive to determining that the destination protocol address does not correspond to the assigned address of the computer, the link layer protocol handler determines if a source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium;

responsive to the link layer protocol determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol communicates a reply data packet to the source host computer which transmitted the received data packet;

the reply data packet comprises an address pairing; and

the address pairing comprises the destination protocol address and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet.

52. The computer of Claim 51, wherein said link layer protocol is at the same hierarchical level as said first protocol handler and said second protocol handler.

53. The computer of Claim 51, wherein said link layer protocol is not part of an operating system of said computer.

54. The computer of Claim 51, wherein said link layer protocol is not part of the operating system of said computer and, therefore, executes independently of operating system protocol(s).

55. The computer of Claim 53, wherein said link layer protocol detects whether a data packet received on one of said first network interface circuit and said second interface circuit is intended for a computer coupled to the other of said first network interface circuit and said second interface circuit.

56. The computer of Claim 55, wherein said link layer protocol, in response to determining that a data packet received on one of said first network interface and said second interface circuit is intended for a computer coupled to the other of said first network interface circuit and said second interface circuit, directs said data packet to said computer coupled to the other of said first network interface circuit and said second interface circuit.

57. The computer of Claim 56, wherein said data packet does not reach any application program(s) of said computer.

58. The computer of Claim 51, wherein said first network interface is bi-directionally coupled to said first protocol handler.

59. The computer of Claim 51, wherein said first network interface is designed to receive a network medium different from the network medium to be received by said second network interface.

60. The computer of Claim 51, wherein said second network interface is bi-directionally coupled to said second protocol handler.

61. The computer of Claim 51, wherein one of said first network interface and said second network interface enables connection to an Ethernet network.

62. The computer of Claim 51, wherein the other of said first network interface and said second network interface enables connection to a 1394 network.

63. The computer of Claim 51, wherein one of said first network interface and said second network interface enables connection to an Ethernet network and the other of said first network interface and said second network interface enables connection to a 1394 network.

66. The computer of Claim 51, wherein said computer is programmed to execute an application program coupled to communicate with one of the first and second protocol handlers.

67. The computer of Claim 66, wherein:

said computer is programmed to execute the link layer protocol coupled to communicate with each of the first and second network interface circuits;

responsive to either of the first and second network interface circuits receiving a data packet comprising a protocol communication, the link layer protocol evaluates a destination protocol address in the received data packet; and

responsive to determining that the destination protocol address does not correspond to the assigned address of the computer, the link layer protocol determines if a source host computer which transmitted the received data packet and the destination host computer designed by the destination protocol address are not on either the first network medium or the second network medium.

68. The computer of Claim 67, wherein each of the first and second protocol handlers is independent of the link layer protocol.

69. The computer of Claim 67, wherein, responsive to the link layer protocol determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not the same one of either the first network medium or the second network medium, the link layer protocol communicates the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer.

70. The computer of Claim 69, wherein:

the received data packet further comprises a hardware physical address;

the destination host computer comprises a network interface circuit coupled to one of either the first network medium or the second network medium;

the network interface circuit of the destination host computer is responsive to a destination hardware physical address; and

prior to communicating the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer, the link layer protocol changes the hardware physical address to match the destination hardware physical address.

73. The computer of Claim 51, wherein:

responsive to the link layer protocol determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination protocol address; and

the address pairing data packet comprises a source protocol address corresponding to the source host computer which transmitted the received data packet and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the destination host computer.

74. The computer of Claim 51, wherein:

responsive to the link layer protocol determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol communicates a reply data packet to the source host computer which transmitted the received data packet;

the reply data packet comprises an address pairing;

the address pairing comprises the destination protocol address and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet;

responsive to the link layer protocol determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium, the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination protocol address; and

the address pairing data packet comprises a source protocol address corresponding to the source host computer which transmitted the received data packet and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the destination host computer.